# Wisconsin Land Cover Image - Level 2

Metadata also available as

## Metadata:



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*Identification_Information:*
*Citation:*
*Citation_Information:*
*Originator:* Wisconsin Department of Natural Resources
*Publication_Date:* 1998
*Title:* Wisconsin Land Cover Image - Level 2
*Geospatial_Data_Presentation_Form:* remote-sensing image
*Publication_Information:*
*Publication_Place:* Madison, Wisconsin
*Publisher:* Wisconsin Department of Natural Resources (WiDNR)
*Other_Citation_Details:*
Upper Midwest Gap Analysis Program(UMGAP) Image Processing Protocol (1998), available at: <URL:http://www.umesc.usgs.gov/umgap/documents.html>
*Online_Linkage:* <http://www.dnr.state.wi.us/maps/gis/datalandcover.html>
*Online_Linkage:*
<ftp://gomapout.dnr.state.wi.us/geodata/landcover/wiscland_landcover.zip>
*Online_Linkage:* <http://maps.dnr.state.wi.us/webview/>
*Description:*
*Abstract:*
This tif-format data image of Wisconsin Land Cover illustrates the Level 2 land cover classification encoded in the Wisconsin Land Cover Grid. The Wisconsin Land Cover Grid is a raster representation of land cover derived from Landsat

satellite imagery. The source data were acquired from the nationwide MRLC (Multi-Resolution Land Characteristics Consortium) acquisition of dual-date Landsat Thematic Mapper (TM) data primarily from 1992. The image processing technique followed was published in the UMGAP Image Processing Protocol (1998).

The original pixel size of the source TM data is 30 meters, however the classified WISCLAND Land Cover data (excluding URBAN) are generalized or 'smoothed' to an area no smaller than four contiguous pixels (equivalent to approximately one acre). The result of this smoothing is that any feature five acres or larger may be resolved in the data (i.e., Minimum Mapping Unit (MMU) of five acres). The Land Cover data are usable at nominal scales of 1:40,000 to 1:500,000 for a wide variety of resource management and planning applications. The classification scheme was designed to be compatible with existing classification schemes such as UNESCO's and Anderson's.

*Purpose:*

These data can be used for landscape scale analysis in various disciplines such as wildlife ecology, forestry, or land use planning. The data have been developed for inclusion in the Gap Analysis Program. The data should be used at scales smaller than 1:40,000. It is also suggested that the data be used at no less than the five acre minimum mapping unit.

*Supplemental_Information:*

Extensive additional information about this data set, including data lineage information, is provided in the 'Land Cover of Wisconsin, User's Guide to WISCLAND Land Cover Data', 1999, WiDNR. The WISCLAND User's Guide is accessible at: <URL:http://www.dnr.state.wi.us/maps/gis/datalandcover.html>

"WISCLAND" is the Wisconsin Initiative for Statewide Cooperation on Landscape Analysis and Data. Additional information about WISCLAND is posted on the Wisconsin State Cartographer's Office website: <URL:http://www.geography.wisc.edu/sco/wiscland/wiscland.html>.

*Time_Period_of_Content:*

*Time_Period_Information:*

*Range_of_Dates/Times:*

*Beginning_Date:* 1991

*Ending_Date:* 1993

*Currentness_Reference:*

Date of the Landsat TM satellite data acquisition for the MRLC Consortium

*Status:*

*Progress:* Complete

*Maintenance_and_Update_Frequency:* None planned

*Spatial_Domain:*

*Bounding_Coordinates:*

*West_Bounding_Coordinate:* -92.964587
*East_Bounding_Coordinate:* -86.706218
*North_Bounding_Coordinate:* 47.088090
*South_Bounding_Coordinate:* 42.457880

*Keywords:*
*Theme:*
*Theme_Keyword_Thesaurus:* none
*Theme_Keyword:* land cover
*Theme_Keyword:* vegetation
*Theme_Keyword:* Landsat Thematic Mapper
*Theme_Keyword:* Gap Analysis
*Theme_Keyword:* environment
*Theme_Keyword:* imageryBaseMapsEarthCover
*Place:*
*Place_Keyword_Thesaurus:* none
*Place_Keyword:* Wisconsin

*Access_Constraints:* None
*Use_Constraints:* None; Recommendations/guidelines documented.
*Point_of_Contact:*
*Contact_Information:*
*Contact_Organization_Primary:*
*Contact_Organization:* Wisconsin DNR, Bureau of Technology Services
*Contact_Position:* GIS Data Specialist
*Contact_Address:*
*Address_Type:* mailing address
*Address:* P.O. Box 7921, 101 S. Webster St.
*City:* Madison
*State_or_Province:* WI
*Postal_Code:* 53707-7921
*Country:* USA
*Contact_Electronic_Mail_Address:* dnr.geodata@dnr.state.wi.us
*Hours_of_Service:* normal business hours or as available

*Browse_Graphic:*
*Native_Data_Set_Environment:*
Microsoft Windows 2000 Version 5.1 (Build 2600) Service Pack 1; ESRI ArcCatalog 8.3.0.800

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*Data_Quality_Information:*
*Attribute_Accuracy:*
*Attribute_Accuracy_Report:*
Accuracy Assessment matrices have been completed for each classification unit of

the dataset, or 'SCCU' (Spectrally Consistent Classification Unit). These matrices should be referred to when using the WISCLAND Land Cover Data, and are included as MS Excel spreadsheets. Accuracy Assessment was calculated separately for wetlands and uplands. With uplands, errors of omission and commission (both at species level, and generalized level) have been tallied for each classification unit or 'SCCU', including an overall percentage of accuracy, and a K-hat statistic. Wetlands accuracy was also based on the classification unit, with percentage User's accuracy for each class and an overall percentage accuracy. Urban accuracy assessment was performed on its unit of classification, the full TM scene. Both User's and an overall accuracy assessment are given.

*Logical_Consistency_Report:*

Because of the 8-bit file structure used for the WISCLAND Land Cover data, the ERDAS software prevents the assignment of invalid pixel values outside of a 0-to-256 range. In addition, the data have undergone visual, on-screen review by members of the DNR Land Cover development team to check for classification errors or other anomalies.

*Completeness_Report:*

A stratified random sampling technique was used to identify 'ground truthing' points for the purpose of land cover classification and accuracy assessment, as described in the WISCLAND Land Cover Protocol. A 'Lineage' document (see Supplemental Information above) lists the final land cover classifications, and classes omitted, for each processing SCCU.

*Positional_Accuracy:*

*Horizontal_Positional_Accuracy:*

*Horizontal_Positional_Accuracy_Report:*

The source nationwide MRLC (Multi-Resolution Land Characteristics Consortium) data were geometrically corrected by EROS Data Center to 1:24,000 scale USGS topographic quadrangle maps. Accuracy standards were on the order of RMS error no greater than 1 pixel. The WISCLAND Land Cover data are considered to reflect the stated positional accuracy of the source MRLC data set, with positional error of no more than plus or minus 1 pixel (30 meters).

*Lineage:*

*Source_Information:*

*Source_Citation:*

*Citation_Information:*

*Originator:*

US Geological Survey, EROS (Earth Resources Observation Systems) Data Center

*Publication_Date:* 1993

*Title:*

MRLC (Multi-Resolution Land Characteristics Consortium) acquisition of dual-date Landsat Thematic Mapper (TM) data

*Edition:* None

*Geospatial_Data_Presentation_Form:* Remote-sensing image
*Publication_Information:*
*Publication_Place:* Sioux Falls, South Dakota
*Publisher:* EROS Data Center
*Other_Citation_Details:* None
*Source_Scale_Denominator:* 40,000 (nominal)
*Type_of_Source_Media:* 8mm magnetic tape
*Source_Time_Period_of_Content:*
*Time_Period_Information:*
*Range_of_Dates/Times:*
*Beginning_Date:* 1991
*Ending_Date:* 1993
*Source_Currentness_Reference:*
Date of the Landsat TM satellite data acquisition for the MRLC Consortium.
*Source_Citation_Abbreviation:* MRLC Landsat TM satellite data.
*Source_Contribution:*
Remote-sensing imagery used to derive land cover information. For more information refer to: Barra, T.J. and D. Shaw, 1994. Multi-Resolution Land Characteristics Consortium: Documentation Notebook. Contract 68-DO-0106.
*Process_Step:*
*Process_Description:*
The Wisconsin Land Cover Image was created from the full WISCLAND Land Cover Grid using the ArcInfo GRIDIMAGE command. The color map file used to create the image is enclosed as an attachment to the metadata.
*Process_Date:* 1994-1998
*Process_Contact:*
*Contact_Information:*
*Contact_Organization_Primary:*
*Contact_Organization:* Wisconsin DNR, Bureau of Technology Services
*Contact_Position:* GIS Data Specialist
*Contact_Address:*
*Address_Type:* mailing address
*Address:* P.O. Box 7921, 101 S. Webster St.
*City:* Madison
*State_or_Province:* WI
*Postal_Code:* 53707-7921
*Country:* USA
*Contact_Electronic_Mail_Address:* dnr.geodata@dnr.state.wi.us
*Hours_of_Service:* normal business hours or as available

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*Spatial_Data_Organization_Information:*
*Indirect_Spatial_Reference:* None
*Direct_Spatial_Reference_Method:* Raster
*Raster_Object_Information:*
*Raster_Object_Type:* Pixel
*Row_Count:* 16995
*Column_Count:* 15846
*Vertical_Count:* 1

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*Spatial_Reference_Information:*
*Horizontal_Coordinate_System_Definition:*
*Planar:*
*Map_Projection:*
*Map_Projection_Name:* Transverse Mercator
*Transverse_Mercator:*
*Scale_Factor_at_Central_Meridian:* 0.999600
*Longitude_of_Central_Meridian:* -90.000000
*Latitude_of_Projection_Origin:* 0.000000
*False_Easting:* 520000.000000
*False_Northing:* -4480000.000000
*Planar_Coordinate_Information:*
*Planar_Coordinate_Encoding_Method:* row and column
*Coordinate_Representation:*
*Abscissa_Resolution:* 30.000000
*Ordinate_Resolution:* 30.000000
*Planar_Distance_Units:* meters
*Geodetic_Model:*
*Horizontal_Datum_Name:* D_North_American_1983_HARN
*Ellipsoid_Name:* Geodetic Reference System 80
*Semi-major_Axis:* 6378137.000000
*Denominator_of_Flattening_Ratio:* 298.257222

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*Entity_and_Attribute_Information:*
*Detailed_Description:*
*Entity_Type:*
*Entity_Type_Label:* Band_1

*Attribute:*
*Attribute_Label:* ObjectID
*Attribute_Definition:* Internal feature number.
*Attribute_Definition_Source:* ESRI
*Attribute_Domain_Values:*
*Unrepresentable_Domain:*
Sequential unique whole numbers that are automatically generated.
*Attribute:*
*Attribute_Label:* Value
*Attribute:*
*Attribute_Label:* Red
*Attribute:*
*Attribute_Label:* Green
*Attribute:*
*Attribute_Label:* Blue
*Attribute:*
*Attribute_Label:* Level1
*Attribute:*
*Attribute_Label:* Level2
*Attribute:*
*Attribute_Label:* Level3
*Attribute:*
*Attribute_Label:* Comment

*Overview_Description:*
*Entity_and_Attribute_Overview:*
Each pixel within the WISCLAND Land Cover raster dataset has an associated 8-bit value which corresponds to a Land Cover class. The WISCLAND Land Cover classification scheme is a hierarchical scheme which is modeled after Anderson's Classification scheme (USGS, 1976) but adaptable to other existing classification schemes, especially the UNESCO/The Nature Conservancy classification system.
*Entity_and_Attribute_Detail_Citation:*
WISCLAND LAND COVER CLASSIFICATION SCHEME - Numbers in parentheses are the numeric class values assigned to pixels. The 3-level hierarchy is indicated by decimal values and indentation. Gaps in the numeric and hierarchical sequence are due to entries in the 'extended' classification which were not part of the final WISCLAND classification scheme. (For a complete explanation of the WISCLAND Land Cover classification scheme, refer to the User's Guide cited in the Supplemental Information section.)

(100) 1. URBAN/DEVELOPED (101) 1.1 High Intensity (104) 1.2 Low Intensity (105) 1.3 Golf Course

(110) 2. AGRICULTURE (111) 2.1.1 Herbaceous/Field Crops (112) 2.1.2 Row

Crops (113) 2.1.3 Corn (118) 2.1.8 Other Row Crops (124) 2.1.9 Forage Crops (includes hay and hay/mix) (148) 2.3 Cranberry Bog

(150) 3. GRASSLAND (includes timothy, rye, pasture, idle, CRP, grass and volunteer)

(160) 4. FOREST (161) 4.1 Coniferous (162) 4.1.1 Jack Pine (163) 4.1.2 Red Pine (166) 4.1.5 White Spruce (173) 4.1.11 Mixed/Other Coniferous (175) 4.2 Broad-Leaved Deciduous (176) 4.2.1 Aspen (177) 4.2.2 Oak (179) 4.2.4 Northern Pin Oak (180) 4.2.5 Red Oak (183) 4.2.8 Maple (185) 4.2.10 Sugar Maple (187) 4.2.12 Mixed/Other Broad-Leaved Deciduous (190) 4.3 Mixed Deciduous/Coniferous

(200) 5. OPEN WATER

(210) 6. WETLAND (211) 6.1 Emergent/Wet Meadow (212) 6.1.1 Floating Aquatic Herbaceous Vegetation (217) 6.2 Lowland Shrub (218) 6.2.1 Broad-Leaved Deciduous (219) 6.2.2 Broad-Leaved Evergreen (220) 6.2.3 Needle-Leaved (222) 6.3 Forested (223) 6.3.1 Broad-Leaved Deciduous (229) 6.3.6 Coniferous (234) 6.3.10 Mixed Deciduous/Coniferous

(240) 7. BARREN (250) 8. SHRUBLAND (255) 9. CLOUD COVER

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*Distribution_Information:*
*Distributor:*
*Contact_Information:*
*Contact_Organization_Primary:*
*Contact_Organization:* Wisconsin DNR, Bureau of Technology Services
*Contact_Position:* GIS Data Specialist
*Contact_Address:*
*Address_Type:* mailing address
*Address:* P.O. Box 7921, 101 S. Webster St.
*City:* Madison
*State_or_Province:* WI
*Postal_Code:* 53707-7921
*Country:* USA
*Contact_Electronic_Mail_Address:* dnr.geodata@dnr.state.wi.us
*Resource_Description:* Downloadable Data
*Distribution_Liability:*
Refer to <http://www.dnr.state.wi.us/org/legal/WebSiteLegalInformation.html>
*Standard_Order_Process:*

*Digital_Form:*
*Digital_Transfer_Information:*
*Format_Name:* ARC/INFO Grid format
*Format_Version_Number:* ARC7.1.1
*File_Decompression_Technique:* WINZIP
*Transfer_Size:* 0.000
*Digital_Transfer_Option:*
*Online_Option:*
*Computer_Contact_Information:*
*Network_Address:*
*Network_Resource_Name:*
<ftp://gomapout.dnr.state.wi.us/geodata/landcover/wiscland_landcover.zip>
*Access_Instructions:* Download from DNR ftp site.
*Offline_Option:*
*Offline_Media:* CD-ROM
*Recording_Capacity:*
*Recording_Density:* 650
*Recording_Density_Units:* megabytes
*Recording_Format:* ISO 9660

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*Metadata_Reference_Information:*
*Metadata_Date:* 20051122
*Metadata_Contact:*
*Contact_Information:*
*Contact_Organization_Primary:*
*Contact_Organization:* Wisconsin DNR, Bureau of Technology Services
*Contact_Position:* GIS Data Specialist
*Contact_Address:*
*Address_Type:* mailing address
*Address:* P.O. Box 7921, 101 S. Webster St.
*City:* Madison
*State_or_Province:* WI
*Postal_Code:* 53707-7921
*Country:* USA
*Contact_Electronic_Mail_Address:* dnr.geodata@dnr.state.wi.us
*Hours_of_Service:* normal business hours or as available
*Metadata_Standard_Name:* FGDC Content Standards for Digital Geospatial Metadata
*Metadata_Standard_Version:* FGDC-STD-001-1998
*Metadata_Time_Convention:* local time
*Metadata_Extensions:*

*Online_Linkage:* <http://www.esri.com/metadata/esriprof80.html>
*Profile_Name:* ESRI Metadata Profile

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